REMARKS

Applicant hereby responds to the Office Action of October 2, 2007, in the above-referenced patent application. Applicant thanks the Examiner for carefully considering the application.

Status of Claims

Claims 1, 4, 5, 7, 9-11, 13-28, 37, 49-51, 53-56, 60 and 61 are pending in the above-referenced patent application. Claims 1, 4, 37, 49, 50, 53, 54, 55, 56, 60 and 61 are independent. Claims 3, 6, 8, 12, 29-36, 38-48, 52, 57-59, were withdrawn from consideration.

Claims 1, 4-5, 7, 9-11, 13, 15, 16, 18, 19, 24-25 and 37 were rejected under 35 U.S.C. §102(b) as being unpatentable over U.S. Patent No. 6,272,261 ("Matsuoka"). Claim 14 was rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuoka in view of an article by Garard de Haan ("Garard de Haan"). Claims 17 and 20-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuoka in view of U.S. Patent Application Pub. No. 2001-0031100 ("Rising III"). Claims 27 and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuoka. Claim 49 was rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuoka in view of U.S. Patent No. 5,815,198 ("Vachtsevanos"). Claims 50-51, 53-56 and 60-61 were rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuoka in view of U.S. Patent No. 4,468,688 ("Gabriel").

Information Disclosure Statement

In the returned form PTO-1449 submitted by Applicant on August 15, 2005, the Examiner did not initial all of the references. Accordingly, Applicant hereby respectfully requests that a corrected form PTO-1449 be returned.

Claim Amendments

Claim 1 has been amended to correct a typographical error. No new matter has been added by way of these amendments.

Rejection under 35 U.S.C. §112

Rejection of claim 26 is respectfully traversed because, as well known in the art, "N" represents a variable. Fig. 2 of the present application shows an embodiment of such variables, N+2. Applicant is entitled to claim embodiments of similar variables having exact values different from those shown in the drawings, showing mathematical relationships among, for example, 2N+1, N+3, and N. Accordingly, withdrawal of the rejection of claim 26 is respectfully requested.

Rejection under 35 U.S.C. §102

Rejection of the claims 1, 4-5, 7, 9-11, 13, 15, 16, 18, 19, 24-25 and 37 is respectfully traversed because, for at least the following reasons, Matsuoka does not disclose all of the claimed limitations.

The claimed invention is directed to image deinterlacing using neural networks. Independent claims 4 requires, in part, selecting a neural network for each edge direction. Independent claims 1 and 37 inherently require a similar "selecting" process as claims 1 and 37 recite "a dedicated neural network for each" of a plurality of different edge directions, wherein multiple neural networks are required for multiple different edge directions. Matsuoka fails to disclose at least these claimed limitations.

The instant Office Action asserts that Matsuoka discloses that a particular network is selected for each of a plurality of different edge directions. Applicant respectfully disagrees. Col. 6, lines 40-50 of Matsuoka (relied upon in the instant Office Action) reads:

> ...Based on the outputted results of **the** hierarchical **neural network**, when the value outputted by the first output unit is greatest, **a filter** which uses bi-linear interpolation is selected; when the value outputted by the second output unit is greatest, **a filter** which uses cubic ... The result of **this selection** is then sent to the interpolation processing means 5. (Emphasis added).

From the above passage, it is clear that Matsuoka teaches using a single neural network

for a plurality of different outputs, and selecting different filters using the same neural network. Thus, contrary to the assertions made in the instant Office Action, Matsuoka does not disclose "selecting a neural network" as claimed (Claims 1, 4 and 37).

Regarding dependent claim 7, Matsuoka further fails to disclose "determining which of a plurality of different neural networks is most closely associated with the determined edge direction." In relying on Fig. 7 and col. 6, lines 40-50 of Matsuoka, the instant Office Action confuses selecting a filter, with "selecting a neural network," as claimed. Thus, claim 7 is patentable over Matsuoka.

Regarding dependent claims 9 and 10, Applicant respectfully submits that Matsuoka further fails to disclose that selecting a neural network comprises "mirroring a data set" as claimed. The instant Office Action has relied upon Fig. 7 of Matsuoka to purportedly supply the "mirroring" of the "data set." In particular, the instant Office Action asserts that a data set in each neuron sent is seen as a mirror. Applicant respectfully disagrees. Fig. 7 of Matsuoka merely shows sending data from the outputs to the purported neurons. Such a sending process is merely copying data, not "mirroring", as claimed. Mirroring is not the same as copying because of the reflection symmetry. Thus, dependent claims 9 and 10 should be allowable for at least these reasons.

In view of the above, Matsuoka fails to disclose all the limitations of independent claims 1, 4 and 37 of the present application. Thus, independent claims 1, 4 and 37 are patentable over Matsuoka for at least the reasons set forth above. Dependent claims are allowable for at least the same reasons, and for at least the additional reasons discussed above. Accordingly, withdrawal of the rejection of claims 1, 4-5, 7, 9-11, 13, 15, 16, 18, 19, 24-25 and 37 is respectfully requested.

Rejection under 35 U.S.C. §103

Claim 14

Rejection of claim 14 is respectfully traversed because, for at least the following reasons, Matsuoka and Garad de Haan, whether considered separately or in combination, fail to show or suggest all of the claimed limitations.

As discussed above, Matsuoka fails to show or suggest "selecting a neural network,"

which is inherently a limitation of dependent claim 14. Garad de Haan, like Matsuoka discussed above, also fails to show or suggest such a limitation, and thus fails to supply that which Matsuoka lacks. This is also evidenced by the fact that Garad de Haan was relied upon in the instant Office Action merely to supply deinterlacing.

In view of the above, claim 14 is patentable over Matsuoka and Garad de Haan for at least the reasons set forth above. Accordingly, withdrawal of the rejection of claim 14 is respectfully requested.

Claims 17 and 20-23

Rejection of claims 17 and 20-23 is respectfully traversed because, for at least the following reasons, Matsuoka and Rising III, whether considered separately or in combination, fail to show or suggest all of the claimed limitations.

As discussed above, Matsuoka fails to show or suggest "selecting a neural network," which are inherently limitations of the dependent claims 17 and 20-23. Rising III, like Matsuoka discussed above, also fails to show or suggest such a limitation, and thus fails to supply that which Matsuoka lacks. This is also evidenced by the fact that Rising III was relied upon in the instant Office Action merely to supply interpolation details.

In view of the above, claims 17 and 20-23 are patentable over Matsuoka and Rising III for at least the reasons set forth above. Accordingly, withdrawal of the rejection of claims 17 and 20-23 is respectfully requested.

Claims 27 and 28

Rejection of claims 27 and 28 is respectfully traversed because, for at least the following reasons, Matsuoka fails to show or suggest all of the claimed limitations.

As discussed above, Matsuoka fails to show or suggest "selecting a neural network," which is also inherently a limitation of the dependent claims 27 and 28.

In view of the above, claims 27 and 28 are patentable over Matsuoka for at least the reasons set forth above. Accordingly, withdrawal of the rejection of claims 27 and 28 is respectfully requested.

Claim 49

Rejection of claim 49 is respectfully traversed because, for at least the following reasons, Matsuoka and Vachtsevanos, whether considered separately or in combination, fail to show or suggest all of the claimed limitations.

As discussed above, Matsuoka fails to show or suggest "selecting a neural network," which is also inherently a limitation of the dependent claim 49. Vachtsevanos, like Matsuoka discussed above, also fails to show or suggest such a limitation, and thus fails to supply that which Matsuoka lacks. This is also evidenced by the fact that Vachtsevanos was relied upon in the instant Office Action merely to supply omitted scan line and interlaced image.

In view of the above, claim 49 is patentable over Matsuoka and Vachtsevanos for at least the reasons set forth above. Accordingly, withdrawal of the rejection of claim 49 is respectfully requested.

Claims 50-51, 53-56 and 60-61

Rejection of claims 50-51, 53-56 and 60-61 is respectfully traversed because, for at least the following reasons, Matsuoka and Gabriel, whether considered separately or in combination, fail to show or suggest all of the claimed limitations.

As discussed above, Matsuoka fails to show or suggest "selecting a neural network," which is also inherently a limitation of independent claims 50, 53, 54, 55, 56, 60, and 61. Gabriel, like Matsuoka discussed above, also fails to show or suggest such a limitation, and thus fails to supply that which Matsuoka lacks. This is also evidenced by the fact that Gabriel was relied upon in the instant Office Action merely to supply interpolation details.

In view of the above, independent claims 50, 53, 54, 55, 56, 60, and 61 are patentable over Matsuoka and Gabriel for at least the reasons set forth above. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of the rejection of claims 50-51, 53-56 and 60-61 is respectfully requested.

Further, in so far as the rejections under 35 U.S.C. 103(a) are concerned, there is no motivation or suggestion for combination/modification as suggested by the Office Action. Rather, the Office Action attempts to modify the references in order to teach Applicant's claimed

invention by improperly using "hindsight" and the teachings of Applicant's own claimed invention in rejecting the claims. Further, even if the combinations/modifications are legally justifiable (which Applicant traverses), such combinations/modifications not only do not teach or suggest the claimed limitations, but combinations/modifications do not lead to functional systems, and as such go against the teachings of the references themselves. Therefore, there is no motivation to combine, as suggested by the Office Action.

Rejoinder

As discussed above, independent claim 4 is allowable. Thus, dependent claims 6, 8, 12, 29-36 should be allowable for at least the same reasons. Accordingly, rejoinder of withdrawn claims 6, 8, 12, 29-36 is respectfully requested.

CONCLUSION

In view of the foregoing amendments remarks, Applicant respectfully requests that the rejections of the claims be withdrawn, and that the case be passed to issue. If the Examiner feels that a telephone interview would be helpful to the further prosecution of this case, Applicant respectfully requests that the undersigned attorney be contacted at the listed telephone number.

Please direct all correspondence to **Myers, Dawes Andras & Sherman, LLP**, 19900 MacArthur Blvd., 11th Floor, Irvine, California 92612.

Respectfully submitted,

12/27/7

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